

REMARKS/ARGUMENTS

Reconsideration and allowance in view of the foregoing amendment and the following remarks are respectfully requested.

Claims 1-11 are now pending. Claims 1-3 were rejected under 35 USC 103(a) as being unpatentable over Komiyama et al. Applicant respectfully traverses this rejection.

At the outset, it is respectfully noted that the cited Komiyama patent is assigned to DENSO Corporation which is also the assignee of the present application. Thus, the Komiyama U.S. Patent does not constitute prior art with respect to this application under §102(e)/103(c). It is noted, however, that the Komiyama reference was based on a priority application filed May 22, 2001 which ultimately published as Japanese Patent Publication No. 2002-340216 on November 27, 2002 (copy of abstract attached hereto). Furthermore, the Komiyama U.S. application earlier published on November 28, 2002. Therefore, while the 102(e)/103 rejection based on the Komiyama patent is not proper and must be withdrawn, it is recognized the Examiner may substitute the published Komiyama U.S. application or the published Komiyama priority application since they have publication dates before applicants' U.S. filing date. Therefore, the Komiyama disclosure will be distinguished hereinbelow on the merits. A Form PTO-1449 listing the above publications, which correspond to the cited Komiyama patent is attached. Since these documents were identified on the face of the Komiyama patent, and are cumulative to the disclosure thereof, it is understood no fee is due for them to be officially cited. However, if a fee is due, please charge our Deposit Account No. 14-1140 under Order 2018-799.

Independent claim 1 is directed to an apparatus comprised of a plunger, a stator that forms a magnetic circuit with the plunger, a coil to generate the magnetic attractive force of an attracting portion of the plunger and wherein either or both of an outer peripheral wall of the plunger and an inner wall of the accommodation portion

form a magnetic portion made of nickel phosphide, the phosphorous content being set in a range of 5 to 15% in mass percentage.

The Examiner recognizes that Komiyama does not teach or suggest that the phosphorus content of the magnetic portion is set within the recited range. However, the Examiner summarily concludes that it would have been obvious to one skilled in the art to adjust the phosphorus content to change the material strength/smoothness. Applicant respectfully disagrees with the Examiner's analysis and conclusion in this regard.

More specifically, one of ordinary skill in the art would normally reduce the phosphorus content of the magnetic portion below 5% to achieve at a maximum possible attractive force. However, as disclosed at page 10, lines 9-10 of applicant's specification, applicant has recognized that decreasing the phosphorus content below 5% causes an excessive increase of the slide force and thus disadvantageously increases the sliding resistance of the plunger. No relationship between phosphorus content and sliding force is disclosed in Komiyama and thus there is no teaching or suggestion that a lower limit to the phosphorus content would have been obvious to the person skilled in the art. Furthermore, as recited at page 10, line 20 - page 11, line 2, applicant has recognized that when the phosphorus content of the magnetic portion is increased beyond 15%, the attractive force for attracting the plunger is excessively reduced. This analysis and end result is also not taught or suggested by Komiyama and would not have been obvious to a person skilled in the art from a review of Komiyama and routine experimentation related to Komiyama's teachings.

For the above reasons, it is respectfully submitted that there is no teaching in Komiyama or the remaining art of record that would lead the skilled artisan through routine experimentation or otherwise to recognize that the phosphorus content of the magnetic portion should be set within the range of 5% to 15% in mass percentage. Indeed, contrary to the Examiner's suggestion, that it would have been obvious to

adjust the phosphorus content to change the material strength/smoothness, because the prior art of record does not suggest that the phosphorus content is related to the material strength/smoothness, and does not motivate the skilled artisan to adjust the phosphorus content in this regard, it would not have been obvious to set a lower limit on phosphorus content as claimed nor in that connection set an upper limit on phosphorus content.

For all the reasons advanced above it is respectfully submitted that claim 1 and dependent claim 2 would not have been anticipated by nor obvious from Komiyama. Independent claim 3 includes the above noted limitation regarding phosphorus content as claim 1 and is therefore also submitted to be allowable over the prior art.

All objections and rejections having been addressed, it is respectfully submitted that the present application is in condition for allowance and an early Notice to that effect is earnestly solicited.

Respectfully submitted,

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